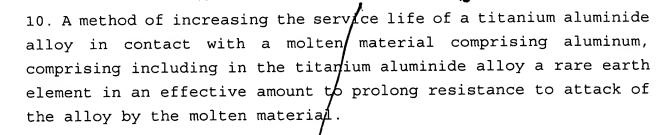
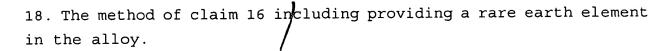
CLAIMS WE CLAIM

- 1. A titanium aluminide alloy for use in contact with a molten material comprising aluminum, said titanium aluminide alloy including a rare earth element in an effective amount to prolong resistance to attack of said alloy by the molten material.
- 2. The alloy of claim 1 wherein the rare earth element comprises Y.
- 3. The alloy of claim 2 wherein said Y is present in an amount of about 1.5% to about 5.5 % by weight of the alloy.
- 3. The alloy of claim 1 which comprises predominantly gamma TiAl.
- 4. The alloy of claim 1 that includes a surface oxide formed insitu thereon.
- 5. The alloy of claim 4 wherein said surface oxide is formed insitu by heating said alloy in an oxygen bearing atmosphere.
- 6. The alloy of claim 4 wherein said surface oxide is formed by cooling a hot casting comprising said alloy in air.
- 7. The alloy of claim 1 comprising TiAl that includes one or more additional alloying elements.
- 8. Tooling for use in contact with molten material comprising aluminum, wherein said tooling comprises the titanium aluminide alloy of any one of claims 1-7.



- 11. The method of claim 10 wherein said rare earth element is included in a predominantly gamma TiAl alloy.
- 12. The method of claim 1 wherein said rare earth element comprises Y included in an amount of about 1.5% to about 5.5 % by weight of the alloy.
- 13. The method of claim 10 including forming a surface oxide insitu on the alloy.
- 14. The method of claim 1 wherein the surface oxide is formed by cooling a hot casting comprising said alloy in air.
- 15. The method of claim 13 wherein the surface oxide is formed insitu by heating said alloy in an oxygen bearing atmosphere.
- 16. A method of prolonging resistance of a titanium aluminide alloy to a molten material comprising aluminum, comprising contacting the alloy for a time with said molten material, removing the alloy from the molten material, heating the alloy in an oxygen-bearing atmosphere at elevated superambient temperature to form a surface oxide thereon, and re-contacting the alloy having the surface film thereon in the molten material.
- 17. The method of claim 16 including prior to first contacting the alloy with the molten material, heating the alloy in an oxygen-bearing atmosphere at elevated temperature to form a surface oxide thereon.



- 19. The method of claim 18 wherein the rare earth element is provided in a predominant by gamma TiAl alloy.
- 20. The method of claim $\frac{1}{4}8$ wherein the rare earth element is Y.
- 21. In a method of die casting a molten material comprising aluminum, wherein said molten material is introduced into a die from a shot sleeve using a plunger in the shot sleeve, the improvement comprising providing one or more of said die, shot sleeve, and plunger as a titanium aluminide alloy including a rare earth element in an effective amount to prolong resistance to attack of said one or more of said die, shot sleeve and plunger by the molten material.
- 22. The method of claim 21 wherein said titanium aluminide alloy includes Y.
- 23. The method of claim 22 wherein said Y is present in said alloy in an amount of about 1.5% to about 5.5 % by weight of said alloy.
- 24. The method of claim 21 wherein a core element is disposed in the die and comprises said titanium aluminide alloy.